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BOEHM-BAWERK ON CAPITAL.¹

THE question which Dr. Boehm-Bawerk seeks to answer is this: Why does capital generally yield a surplus value, *i.e.* something over and above itself,—not merely more goods, but more value, more exchange power, so that the possessor of capital can command an income proportionate to his capital, either with or without personal exertion of his own? In his earlier treatise, *Capital and Interest*, the author attacks all previous theories on this subject by putting to each of them in succession certain test questions,—such, for example, as these: You say that interest arises because capital is productive. Of what is capital productive? It may be productive of goods greater in amount than itself, or equal to itself, or less than itself. It may be productive of goods whose power of commanding other goods in exchange is highly variable. We want to know why capital commands more *value* than itself. It is no more an answer to this to say that capital is productive than to say that God is good. Again, you say that abstinence must have a reward; that the capitalist abstains from consuming his capital, and for this he must be paid; otherwise he would consume it, and so capital would disappear and the world's progress would come to an end. But has there been any agreement among mankind to reward capitalists for abstinence? If so, how much must they be paid? Really there is no *must* about it. All that can be affirmed under this head is that when people find interest offered to them, together with security for the principal, they perceive that it is worth their while to abstain from consuming their capital. In other words, abstinence is a consequence, not a cause of interest.

¹ The Positive Theory of Capital. By Eugen von Boehm-Bawerk. Translated with a Preface and Analysis by William Smart, M.A., Lecturer on Political Economy in Queen Margaret College, Glasgow. Macmillan & Co., 1891. [For a review of the German original, see POLITICAL SCIENCE QUARTERLY, IV, 342. — Eds.]

The author's theory of interest is very simple. "Present goods are, as a rule, worth more than future goods of like kind and number. This proposition is the kernel and centre of the interest theory which I have to present" (page 237). This is a fact of experience so nearly universal that we would not thank anybody for taking pains to prove it, and it seems at first blush to account satisfactorily for the phenomenon of interest. But when examined more closely it becomes less satisfactory. We say: Present goods are worth more than future goods. One hundred dollars in hand is worth more than one hundred dollars a year hence. These propositions are identical. Now if we say that interest exists because one hundred dollars in hand is worth more than one hundred dollars a year hence, do we really advance matters? And would the mere fact that present goods are worth more than future goods account for the phenomenon of interest? Hardly. Among barbarous tribes present goods are worth infinitely more than future goods; yet interest does not exist there in the form of loans, and very slightly in any other form.

In the opinion of the author a theory of interest must rest upon a secure theory of capital. Hence the present work, the *Positive Theory of Capital*. Book I is on the nature and conception of capital, and Book II on capital as an instrument of production. Both are simple and easily understood, and both are necessary to a complete knowledge of the subject treated. There have been many definitions of capital, and the question before us is not which definition is absolutely right, but which one is right for our present purpose of ascertaining the cause of interest. Here everything depends upon the view we are taking of capital. For some purposes we may agree that land is capital, that muscular power is capital, that acquired skill is capital. But for the present purpose the author shows that all these must be cast out of the reckoning. More doubtful is his contention that supplies of food and clothing, by which labor is sustained during the process of production, should also be cast out. These, he thinks, being part and parcel of what every community requires to sus-

tain life, and which must be had and consumed whether production goes on or not, are not the things which we have in view when we ask why surplus value issues out of capital.

The essential fact is that roundabout methods of production are more productive than direct methods. They yield larger results. To get water from a spring by dipping it with your hand is the direct method. To get it by constructing water works leading to your house is the roundabout and far more productive method. Now capital consists of means and appliances for working in the roundabout and more productive way. The author considers this an empirical fact which political economy does not and cannot show *a priori*. Nor is the economist bound to show *why* roundabout (capitalistic) methods are more productive than direct ones. Nevertheless the author says: "I attach particular value to explaining its cause, and after what has been said as to the nature of production this should not be very difficult." The cause is merely that man can harness nature to his wagon. Although his strength does not enable him to rend rocks by direct application, he knows how to make wedges and hammers and gunpowder. He knows how to take the roundabout road. The author's view is that capital consists of "produced means of production," or a group of intermediate products brought into existence by labor to assist in further production. This view excludes land, labor and subsistence from the category of capital, but it includes tools, buildings and all raw materials that have had any labor expended upon them. Here is the thesis respecting capital:

All consumption-goods which man produces come into existence through a co-operation of human power with natural powers, which latter are partly economic, partly free. By means of these primary productive powers man may make the consumption-goods he desires either immediately or through the medium of intermediate products called capital. The latter method demands a sacrifice of time, but it has an advantage in the quantity of product, and this advantage, although perhaps in decreasing ratio, is associated with every prolongation of the roundabout way of production [page 91].

On page 86 the assertion that every extension of the productive process leads to some surplus result is qualified by the words, "so far as it is wisely chosen." This excludes every case where no surplus result follows, every such case being one where the extension of the process was not wisely chosen. It excludes moreover all cases where shorter and more direct and less costly methods yield larger results than the former long and roundabout methods; as, for example, boring for oil instead of sending ships to the Arctic Ocean to catch whales. Most of the new applications of electric power are more direct and less roundabout than the steam machinery that they have superseded. Obviously, in any of these cases an extension of the process back to the old roundabout method would not be wisely chosen. Here we have something which looks like an identical proposition, *viz.*, every extension of the productive process leads to a surplus result, provided it does not lead to a contrary result. But we must not pronounce a hasty judgment, since we shall meet this proposition again.

"To obtain the basis for the principal part of our work—the explanation of interest—we require to go into the theory of value," says Dr. Boehm-Bawerk. Accordingly he goes into the theory of value to the extent of sixty pages. I confess that I find these pages very hard reading; they offer in this respect a marked contrast to the same author's presentation of the same subject in the *Annals of the American Academy of Political and Social Science* (January, 1891). In the last-mentioned article, the theory of value common to the Austrian school, and which English and American economists couple with the name of Jevons, is stated in few words and with admirable clearness. In the treatise before us it is so involved and complicated that after reading it with the best attention I can command, I am not sure that I understand it. I fear lest I may fall into the same kind of difference with the author that he has fallen into with Professor Knies, as to whether he rightly understood what Professor Knies said (page 288). That the author is aware of some obscurity in his treatment of the subject appears from the apology which he makes for it on page xxvii of his preface.

With some trepidation I shall attempt to state briefly this theory of value, which is most commonly called the theory of "final utility," or, as Dr. Boehm-Bawerk prefers to call it, "marginal utility." If America produces a surplus of wheat, that surplus will be sold abroad, and the price of the whole crop will be identical (freight charges excepted) with the price of the surplus, however small that surplus may be. But if there is no surplus for export, or if foreign countries have produced all the wheat they require, there will still be in America different uses to which wheat may be applied, such as distilling, starch making, poultry feeding, *etc.* The price of the whole crop will be the price at which it sells for the least pressing requirement, and will vary as the latter varies. Thus the surplus over and above what is needed for human food measures the exchange value of the whole. This is the "final utility" theory of value as I understand it. At bottom it makes the estimation or appreciation of buyers, instead of cost of production, the determinant of the value of an article in the market. At present the field of economics is divided between the supporters of the final-utility theory and those of the cost-of-production theory. Although the weight of authority is largely with the latter, my own preference lies with the former; but I cannot consider the phrase "final utility" an apt one. There are always two ends to a line, and the word final does not tell us which end is meant. When we speak of final causes we mean first causes. When we speak of final utility we mean last utility, or rather least utility. Why should we not then say minimum utility, instead of final utility, or marginal utility, which Dr. Boehm-Bawerk prefers?

Coming now to the proposition already quoted, that present goods are worth more than future goods, we can dispense with argument to prove this, as we can dispense with argument to prove that a bird in the hand is worth two in the bush. The reasons why present goods are worth more than future goods, according to Dr. Boehm-Bawerk, are three, *viz.*, (1) want of imagination, (2) defect in will, and (3) the uncertainty of life. We do not picture to ourselves our future wants as vividly as

we feel our present wants. Even if we do, we may be lacking in will power to deny ourselves now in order to enjoy hereafter. We know that we shall not be living to enjoy any kind of goods a hundred years hence, probably not fifty, perhaps not ten. Since we do not put the same estimate on future as on present wants, when we exchange present for future goods there is an agio on present ones. A loan without interest is a gift of this agio.

At page 260 we come again upon the proposition concerning roundabout and lengthened processes of production, which is now stated in these words :

It is an elementary fact of experience that methods of production which take time are more productive. That is to say, given the same quantity of productive instruments, the lengthier the productive method employed, the greater the quantity of products that can be obtained. In previous chapters we went very thoroughly into this, showed the reasons of it and illustrated and confirmed it by many examples. I venture to think we may now assume it as proved.

There is no saving clause here for cases where the lengthened process is not wisely chosen, but we must introduce it. That is, we must understand that this principle applies only to the cases that it does apply to. We must understand also (for the author expressly mentions it) that it has its limits in another sense. It does not apply to infinity or to centuries, because there is no way of continuing the same piece of work for an indefinitely long period. "Trees do not grow up till they meet the sky." Yet he says on page 265 : "We should obtain the greatest number of units (of product) by an infinitely long production process or a process lasting a hundred or two hundred years." What are the processes that *can* last so long? The only one I can imagine is the planting and growth of trees.

For purposes of illustration Dr. Boehm-Bawerk takes a seven years' period and assumes that a month's labor which might yield 100 units of product immediately, would yield 200 units at the end of a year, 280 units at the end of two years, 350 at the end of three years, and so on, by a sort of law of diminishing returns, till the end of the seventh year, when the number of

units would be 500. It is understood of course that the month's labor in each case is left dormant for the periods named, and that time alone does everything beyond the first month.

In order to show that value of product as well as quantity of product follows this law, we have another set of computations, accompanied by explanations in the text. This is probably one of the "long, difficult and troublesome" passages apologized for in the preface. Dr. Boehm-Bawerk has here given some countenance to the newest school of political economy (very flourishing in the United States) which may be called the "unintelligible school"; our regret is the more profound since this is the only work of the author which is open to such criticism, all his other writings with which I am acquainted being models of perspicuous clearness. I shall assume *ad hoc* that he has proved that value of product follows the same rule as quantity of product, whatever that rule may be.

In Book VI the author elaborates the conception that a loan is an exchange of present goods for future goods, the difference in time conferring an agio on present goods, just as a difference of place (between London and New York, for example) may confer an agio, or premium, on money in one place over the same kind of money in the other place. No valid objection can be advanced against this. Dr. Boehm-Bawerk has sufficiently answered Professor Knies's contention, *viz.*, that an essential feature of every exchange is a difference *in kind* between the things exchanged,—that we exchange bread for coal, not bread for bread or coal for coal. But it is not difference of kind, it is the *advantage of the exchangers*, that constitutes the essential feature of an exchange, and this may be secured by difference of time or of place, as easily as by difference of kind.

In the contemplation of the capitalist producer the materials he buys, the labor he hires, the machinery he uses, are the embodiment of future goods. They cannot have a higher value than the goods which are to come out of them, which, as we have seen, have a less value than present goods of like kind and

number. This is the explanation of profit in capitalist undertaking. The capitalist pays present goods and gets future goods in exchange. The difference between them is a gross profit, which includes interest and wages of superintendence. All interest must be sought in the gains of capitalist undertaking. If there were no such gains interest would cease. Dr. Boehm-Bawerk seeks to assimilate the rent of land to interest, but the attempt is hardly a happy one.

Considerations of space forbid analysis of Book VII, on the "Rate of Interest," which is not essential to the theoretical part of the work. Chapters IX and X of Book VI, on the "Socialist Conception of Interest," are very clear and cogent, and are equally acceptable whether we agree with the author's theoretical conception of the birth of interest or not.

We are now prepared to put the parts of this conception together. The question to be answered is found on the first page of the author's *Capital and Interest*:

It is generally possible for any one who owns capital to obtain from it a permanent net income called interest.

This income is distinguished by certain notable characteristics. It owes its existence to no personal activity of the capitalist and flows in to him even when he has not moved a finger in its making. Consequently it seems, in a peculiar sense, to spring from capital, or, to use a very old metaphor, to be begotten of it. It may be obtained from any capital, no matter what be the kind of goods of which the capital consists: from goods that are barren as well as those that are naturally fruitful; from perishable as well as from durable goods; from goods that can be replaced and from goods that cannot be replaced; from money as well as from commodities. And finally it flows in to the capitalist without ever exhausting the capital from which it comes and therefore without any necessary limit to its continuance. It is, if one may use such an expression about mundane things, capable of an everlasting life.

Thus it is that the phenomenon of interest as a whole presents the remarkable picture of a lifeless thing producing an everlasting and inexhaustible supply of goods. And this remarkable phenomenon appears in economic life with such perfect regularity that the very conception of capital has not infrequently been based on it.

Whence and why does the capitalist, without personally exerting himself, obtain this endless flow of wealth?

The answer is that present goods are, as a rule, worth more than future goods of like kind and number. When the author goes on to say that "out of this fact spring, naturally and necessarily, all the manifold forms which the phenomena of interest take," we must consider that he looks upon this fact as the *vera causa* of interest. At all events I should have so considered, had he not immediately proceeded to push the inquiry back by one stage and show why present goods are worth more than future goods. The reasons given are, he tells us, rather in the domain of psychology than of economics (page 254). Yet they are veritably economical if they have a distinct influence on the *oikonomia* (housekeeping) of mankind. As indicated above, we cannot accept the superiority in value of present goods to future goods as a cause, since that is only another way of stating the problem. We must therefore look closely at the three assigned causes of that superiority. These are defect of imagination, defect of will and uncertainty of life.

Are we authorized to say that interest exists because men do not sufficiently discern and appreciate their future wants, or have not the will-power to curb present appetites, or because they must die, or for all those reasons combined? Is it not true, on the other hand, that the overwhelming majority of civilized mankind have the keenest perception of their future wants? Is there anything that they are more concerned about? Does not the provision for future want occupy by far the largest share of the attention of all but an imperceptible fraction of civilized peoples? Who are they whose imaginations are defective on this point? Scholars, clergymen, artists and philanthropists (and not all of these) may be put in this category. They are offset, if not in numbers, certainly in economical importance, by those who may be fairly called misers — men whose minds are so intensely fixed on future wants, that they do not satisfy present ones.

And who are they whose defect of will leads to the consumption, day by day, of all that they have or earn, thus enhancing the demand for, and value of, present goods as compared with future goods? Defect of means must not be confounded here

with defect of will. There are large numbers of people in every country who live from hand to mouth because that is the only way they can live. We are not concerned with this class now, but only with those who, having a surplus of present goods sufficient to lay up something, fail to do so because they cannot control their appetites. We grant that these are not an insignificant class; yet we should not rate them higher than the proportion who reach the poor-house as against the proportion who have money in the savings banks.

Finally, how much importance must we assign to the shortness and uncertainty of life as a factor determining the demand for, and value of, present goods over future goods? Most producers (and we are now concerned only with producers—with those who could save, but who fail to do so because of the uncertainty of life) have children or others dependent on them. Those who have none frequently have the design of conferring benefactions on the human race after they are dead. Parents generally have a strong desire to provide for their children, so that the uncertainty of life, instead of operating as a deterrent to saving, is one of the most powerful incentives to it. Life insurance is founded upon this instinct and is only one of its many manifestations.

The large place assigned by Dr. Boehm-Bawerk to roundabout and lengthened processes of production has already been adverted to. On page 84 we read:

On the whole it may be said that not only are the first (roundabout) steps more productive, but that every lengthening of the roundabout process is accompanied by a further increase in the technical result; as the process, however, is lengthened, the amount of product, as a rule, increases in a smaller proportion.

This proposition also is based on experience, and only on experience. What it says must be simply taken as a fact of the *technique* of production.

In a foot-note to page 86, however, we find an allusion to a current of experience running in the opposite direction.

But often a happy invention may lead to a better, and at the same time shorter, way of production, such as the manufacture of certain dye-

stuffs from chemical instead of plant bodies. However elaborate the former may be, it is still certainly far more direct and speedy than a manufacture which has to wait on tedious processes of growth.

This introduces us to what I consider the most marked and distinguishing feature of the modern industrial world. That feature is not the lengthening of processes of production, or the employment of larger capitals and more roundabout ways to produce a given quantity of products, but the shortening of processes, the employment of less capital and less roundabout ways. One or two such instances have been mentioned.

The fact is that the two methods of production—the longer and the shorter, the more roundabout and the less roundabout—hold the realm of mundane affairs together, but with a preponderance in favor of the latter. The printing business supplies an apt illustration of both. Fifty years ago the printing of newspapers was done by hand presses. Then came the invention of the rotary press. This was a roundabout process requiring a large expenditure of capital, but it yielded an enormous result. But this press required a man to feed each sheet into the machine twice (to print the two sides), and another man to take each sheet after it came out and put it through another and separate machine in order to fold it. It required also that the sheets should be cut to the required size at the paper mill, and that the paper should be skilfully dampened before it was put in the hands of the press-feeders. Now the old rotary press with all its costly appendages is discarded, and a new machine is introduced which takes the paper from the manufacturer's original roll and delivers papers more rapidly than before, dispensing with feeders, wetters and folders. Moreover, it prints both sides at once, thus doubling the result at a stroke. Still further, if the newspaper requires a supplement on particular days, *i.e.* an enlargement of its normal size, the new press adds this without any extra cost. In short, the new "perfecting" press does the work of at least three of the old presses and does not cost any more; in fact it costs less, if we take into account all the supplementary machinery of the old press.

Now we can imagine that this result of three for one might have been obtained by a roundabout capitalistic process; that is, by the construction of a machine much more expensive than the old one and producing what we now get, namely, papers printed on both sides and supplements to boot, all folded ready for distribution. But what mankind is ever striving for is not to get more with more, but to get more with less. If we should extend our inquiries into the modern processes of making steel, the results would be still more surprising than those in the case I have mentioned. Indeed time would fail us to describe them. As I write these lines the news comes that motive power has been carried from the falls of the Neckar to the city of Frankfort-on-the-Main on three ordinary telegraph wires, which at former stages of the art would have required a mass of copper of much greater cost.

In view of such considerations it cannot be regarded as an empirical fact that roundabout and lengthened processes are more productive than direct processes. Nor could we consider this a cause of interest, unless it were a universal rule, which the author admits is not the case since he limits it to instances in which the roundabout process is "wisely chosen."

As a matter of fact the cause of interest is to be found in the very saving clause which Dr. Boehm-Bawerk here introduces. "Wisely chosen" means that a man's intelligence has enabled him to get more value out of a given supply of materials, labor and machinery than he put into it. He might have got less value out of it. Those who do not possess intelligence generally do get less, and in due time their names adorn the list of bankruptcies. There is no universal rule that the owner of capital can obtain from it a permanent net income called interest. The heads of all the capitalists in the world are aching and their nerves are shaking lest their income shall cease to be permanent and shall disappear altogether. A really permanent income is what all capitalists are doubtfully striving for, and this is the reason why the loans of first-rate governments are so eagerly sought, and why they command so high a premium. The interest on these loans, being collected as taxes from the whole com-

munity, rests upon a safer basis than interest in general. It is, in fact, in a quite separate category, since such borrowings are not usually for purposes of production but rather for those of war and waste. But even government loans need to be "wisely chosen," as every stock exchange in the world can attest. The Argentine debt wrecked one of the largest houses in the world a little less than a year ago, and the effects of that crisis are felt in every money market of Europe and America to this hour.

In a passage quoted above Dr. Boehm-Bawerk qualifies his statement of the problem in hand by the word "generally," thus :

It is *generally* possible for any one who owns capital to obtain from it a permanent net income called interest.

On page 116 of *Capital and Interest*, while pressing the productivity theories to the wall, he puts the problem thus :

The theorist, then, who professes to explain interest, must explain the emergence of surplus value. The problem more exactly stated will therefore run thus: Why is the gross return to capital *invariably* of more value than the portions of capital consumed in its attainment? Or in other words: Why is there a *constant* difference in value between the capital expended and its return?

The difference between "generally" and "invariably" is a vast difference here, but I cannot accept either the one or the other statement as a fact in mundane affairs. A few words from Bagehot will explain why. Says this acute observer :

In our common speculations we do not enough remember that interest on money is a refined idea and not a universal one. So far indeed is it from being universal, that the majority of saving persons in most countries would reject it. Most savings in most countries are held in hoarded specie. In Asia, in Africa, in South America, largely even in Europe they are thus held, and it would frighten most of the owners to let them out of their keeping. An Englishman—a modern Englishman at least—assumes as a first principle that he ought to be able to put his money into something safe that will yield five per cent, but most saving persons in most countries are afraid to put their money into anything. Nothing is safe to their minds; indeed, in most countries, owing

to a bad government and a backward industry, no investment, or hardly any, is really safe. In most countries most men are content to forego interest; but in more advanced countries at some times there are more savings seeking investment than there are known investments for; at other times there is no such superabundance.¹

Then he quotes a well-known passage from Macaulay in which the fact is mentioned that the father of Pope, the poet, when he retired from business in London, carried to his retreat in the country a strong box containing nearly twenty thousand pounds, from which he took from time to time what was required for household expenses,—this on account of the paucity of investments.

So it appears that the word "generally" needs a further qualification. It must be restricted to countries which have intelligence and good government. Since good government is the product of intelligence, we may say that interest depends upon intelligence both in general and in particular: in general because in unintelligent countries it does not exist, or exists only as an exception; in particular because only the intelligent members of the community can make capital earn interest. It is only such persons indeed who can keep capital itself from going to waste; for capital unused is assailed by moth and rust and soon perishes. It requires constant renewal, and intelligence only can renew it. Still more and higher intelligence is required to make it yield a surplus value over and above its own renewal, which surplus we call interest.

Let us now ask what is meant by the "productivity of capital." It cannot mean that a bow and arrow will bring down any game without a man behind them, or that the iron works of Krupp will yield a surplus result without the directing skill of Krupp or of somebody else. Yet in common parlance, and especially in socialist parlance, the meaning is hardly to be distinguished from that. There is nothing more common in the controversies of the day than the phrase "conflict of labor and capital." We are told on the one hand that capital oppresses labor, and on the other that the interests of labor and capital

¹ *Lombard Street*, chap. vi.

are identical. Probably few persons who hurl those maxims back and forth understand what they mean. There is no conflict between labor and capital, since capital is inert; it cannot come into conflict with anything, least of all with labor. But there may be and often is a conflict between laborers and capitalists respecting the rate of wages to be paid by the latter to the former. That is, there is a conflict between two men, or groups of men, whose circumstances are different only in the fact that generally one of them can wait longer than the other. Capital does not oppress labor, but capitalists do sometimes refuse to employ laborers until hunger and cold have compelled the latter to work for less pay than they ought to have, or think they ought to have. Here again persons and only persons are concerned. The interests of labor and of capital certainly are identical (if capital can be said to have any interests), but the interests of laborers and of capitalists are diametrically opposed to each other, because it is for the interest of the laborer to get as much as possible for his labor, and it is for the interest of the capitalist to pay as little as possible for it.

If the productivity theory tells us that interest exists because capital is productive, it is wrong, of course; since the bow and arrow cannot, of themselves, bring down any game, nor the iron works of Krupp, of themselves, produce any surplus result, or any result at all, except that of accumulating rust and eventually tumbling down. But if the productivity theory tells us that interest exists because there are men in the world who know how to get a surplus result from the use of capital, I apprehend that that is the true explanation of interest. These "captains of industry" are rare in every community, but they are sufficiently numerous as yet in civilized countries to absorb the savings of those countries and to put them to profitable use as tools of reproduction. Out of this profitable use or surplus result they are enabled to pay a certain rate of hire, or interest, for the use of tools. This rate of hire is determined by the law of supply and demand. It varies with different countries, and it varies with different times in the same country. The captains of industry do not always succeed. A certain proportion

of them fail every year, the capital in their hands not only yielding no surplus result, but being completely dissipated and struck out of the world's ledger. Since, however, a sufficiency remain who do succeed, interest continues to exist as a phenomenon of human affairs, but not as a universal phenomenon. Without the particular kind of intelligence which Mr. M. L. Scudder, Jr., aptly calls the "value sense," interest could not exist any more than poetry could exist without the poetic temperament, or art without artistic taste.

In *Capital and Interest* (page 123), Dr. Boehm-Bawerk puts this question to the productivity theorists :

Suppose a commodity requires for its production labor and the use of land to the value of £100, and suppose that it takes so long to make the commodity that the capital advanced to purchase those services (in this case £100) is not replaced for a year, why is the commodity worth not £100 but more — say £105?

If this question were put to a man of affairs on the street he would probably say :

Because the man making the commodity was a smart fellow. He understood his business. If he had not been a smart fellow and had not understood his business the product might not have been worth even the original £100, but only £90.

It should be observed too that the same persons are more capable of getting surplus value from capital at some times than at other times. M. de Lesseps, for example, managed £20,000,000 at Suez in such a way that it yields surplus value, but he managed three times that amount at Panama so that it does not yield surplus value, or value of any kind.

While I am not able to accept the author's conclusions I yet agree entirely with Dr. James Bonar¹ that his book must be regarded as one with which all subsequent writers on interest will have to reckon. Every reader must have the highest admiration for his learning, his candor, his courtesy to opponents and his (generally) pellucid style.

HORACE WHITE.

¹ In the *Quarterly Journal of Economics*, April, 1889.